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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,076	06/17/2004	Den-Jen Hwung	12556-US-PA	4075
31561	7590	12/27/2007	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE 7 FLOOR-1, NO. 100 ROOSEVELT ROAD, SECTION 2 TAIPEI, 100 TAIWAN			NEGRON, WANDA M	
			ART UNIT	PAPER NUMBER
			2622	
			NOTIFICATION DATE	DELIVERY MODE
			12/27/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/710,076	HWUNG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Wanda M. Negrón	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 October 2007.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,3-6,9 and 10 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-6,9 and 10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 4 recites the limitation "the size of the display screen" in line 7. There is insufficient antecedent basis for this limitation in the claim. Therefore, for examining purposes, the features recited in line 7 of claim 4 will not be accorded any patentable weight.

Claim 5 is being rejected as incorporating the deficiencies of claim 4.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 3, 6 and 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Ausems et al. (US Application Publication No. 2001/0044321 A1), hereinafter referred to as Ausems, in view of Parulski et al. (US Patent No. 6,292,218 B1),**

hereinafter referred to as Parulski, and in view of Toma et al. (US Patent No. 6,707,498 B1), hereinafter referred to as Toma, and further in view of den Boer et al. (US Patent No. 5,780,871), hereinafter referred to as Boer.

Regarding claim 1, Ausems teaches a palm-top electronic device for capturing and displaying images, e.g. a PDA with an integrated digital camera (see paragraph [0042]) comprising a display screen (145) for displaying the images captured by a photosensitive chip having a photosensitive area, i.e. an inherent image sensor, wherein the display screen has a rectangular shape with a width-to-height aspect ratio is smaller than 1 (see fig.1d). Ausems, however, does not explicitly teach that the photosensitive area is rectangular in shape with a width-to-height aspect ratio smaller than 1, that the size of the photosensitive chip is smaller than the size of the display screen, and that the aspect ratio obtained by dividing the first width by the first height is substantially equal to the aspect ratio obtained by dividing the second width by the second height.

As disclosed by Parulski in col. 8, lines 1-7, the concept of matching the aspect ratio of the effective area of an image sensor to the aspect ratio of the intended display screen is not novel, and, although costly, is considered to be the easiest way to map the sensor pixels to the display pixels. In addition, the concept of a solid-state imaging device having a width-to-height aspect ratio smaller than 1 is well known in the art, as evidenced by Toma (see col. 9, lines 9-17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the imaging device of Toma in the palm-top

electronic device taught by Ausems, while aiming to match their respective aspect ratios, in order to obtain a one-to-one mapping between the image sensor pixels and the display pixels since doing so minimizes the image processing required for image display.

Regarding the claimed feature of having the photosensitive chip smaller than the size of the display screen, the concept of an image sensor with an image pixel pitch of at least 9 microns is old and well-known in the art, as evidenced by Parulski (see col. 5, lines 49-57). It is also well-known in the art that an LCD has a conventional pixel pitch of at least 40 microns, as evidenced by Boer (see col. 6, lines 60-63). Accordingly, those of ordinary skill in the relevant art will readily appreciate that the size of a photosensitive chip which, in order to obtain a one-to-one mapping as discussed above, has the same number of pixels as an LCD will typically be smaller than the size of said LCD. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have an electronic device for capturing and displaying images that has a photosensitive chip smaller than a display screen since a person with ordinary skill has good reason to pursue the known options within his or her technical grasp if this leads to an anticipated result. Furthermore, it would have been an obvious matter of design choice to have the size of the photosensitive chip smaller than the size of the display screen since the applicant has not disclosed that having the size of the photosensitive chip smaller than the size of the display screen solves any stated problem or is for any particular purpose.

Regarding **claim 3**, Ausems, as modified by Parulski and Toma, discloses the claimed invention except for the photosensitive chip being a CMOS image sensor. It would have been an obvious matter of design choice to use a conventional CMOS sensor since the applicant has not disclosed that using a CMOS image sensor solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a CCD image sensor as disclosed by Ausems, as modified by Toma.

Regarding **claims 6 and 10**, Ausems teaches a palm-top electronic device for capturing and displaying images, e.g. a PDA with an integrated digital camera (see paragraph [0042]) comprising a display screen (145) for displaying the images captured by a photosensitive chip, i.e. an inherent image sensor, wherein the display screen has a rectangular shape with a width-to-height aspect ratio is smaller than 1 (see fig.1d). Ausems, however, does not explicitly teach that the display screen is suited for showing the entire image captured by the photosensitive chip and that the entire image is shown fully using the entire display screen, that the photosensitive area of the photosensitive chip has a rectangular shape with a width-to-height aspect ratio smaller than 1, wherein the size of the photosensor is smaller than the size of the display screen and that the width-to-height aspect ratio of the effective area of the image sensor corresponds to the width-to-height aspect ratio of the display screen.

As disclosed by Parulski in col. 8, lines 1-7, the concept of matching the aspect ratio of the effective area of an image sensor to the aspect ratio of the intended display

screen is not novel, and, although costly, is considered to be the easiest way to map the sensor pixels to the display pixels. In addition, the concept of a solid-state imaging device having a width-to-height aspect ratio smaller than 1 is well known in the art, as evidenced by Toma (see col. 9, lines 9-17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the imaging device of Toma in the palm-top electronic device taught by Ausems, while aiming to match their respective aspect ratios, in order to have the display screen suited for fully showing the entire image captured using the entire display screen by having a one-to-one mapping between the image sensor pixels and the display pixels since doing so minimizes the image processing required for image display.

Ausems, as modified by Parulski and Toma, discloses that the photosensitive area of the photosensitive chip has a rectangular shape with a width-to-height aspect ratio is smaller than 1 (see Toma, pixel field 2 in figure 8). In addition, Ausems, as modified by Parulski and Toma, discloses that the width-to-height aspect ratio of the effective area of the image sensor corresponds to the width-to-height aspect ratio of the intended display screen (see Parulski, col. 8, lines 1-7).

Regarding the claimed feature of having the photosensitive chip smaller than the size of the display screen, the concept of an image sensor with an image pixel pitch of at least 9 microns is old and well-known in the art, as evidenced by Parulski (see col. 5, lines 49-57). It is also well-known in the art that an LCD has a conventional pixel pitch of at least 40 microns, as evidenced by Boer (see col. 6, lines 60-63). Accordingly,

those of ordinary skill in the relevant art will readily appreciate that the size of a photosensitive chip which, in order to obtain a one-to-one mapping as discussed above, has the same number of pixels as an LCD will typically be smaller than the size of said LCD. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have an palm-top electronic device for capturing and displaying images that has a photosensitive chip smaller than a display screen since a person with ordinary skill has good reason to pursue the known options within his or her technical grasp if this leads to an anticipated result. Furthermore, it would have been an obvious matter of design choice to have the size of the photosensitive chip smaller than the size of the display screen since the applicant has not disclosed that having the size of the photosensitive chip smaller than the size of the display screen solves any stated problem or is for any particular purpose.

Regarding **claim 9**, Ausems, as modified by Parulski, Toma and Boer, discloses the claimed invention except for the photosensitive chip being a CMOS image sensor. It would have been an obvious matter of design choice to use a conventional CMOS sensor since the applicant has not disclosed that using a CMOS image sensor solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a CCD image sensor as disclosed by Ausems, as modified by Toma.

**Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Toma (US Patent No. 6,707,498 B1), and further in view of the Internet publication CMOS versus CCD & What's It All Mean?. Canon EOS D30 Digital SLR Review. Imaging Resource Website, 2000 [retrieved on 2007-06-27]. Retrieved from the Internet: <URL: www.imaging-resource.com/PRODS/D30/D30A4.HTM> (hereinafter referred to as the Canon review).

Regarding **claim 4**, Toma discloses a photosensitive area, i.e. a pixel field (2), having a rectangular shape with a width-to-height aspect ratio smaller than 1 (see col. 9, lines 9-17). It would have been inherent to have the photosensitive area disposed on a chip, i.e. a substrate. Toma, however, does not explicitly disclose that the photosensitive chip has a rectangular shape with a width-to-height aspect ratio smaller than 1.

As evidenced by the Canon review (see first figure on page 4), photosensitive chips are conventionally designed in a rectangular shape, substantially matching the aspect ratio of the photosensitive area.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to design the photosensitive chip in a rectangular shape with a width-to-height aspect ratio substantially similar to its photosensitive area in order to minimize production costs by conforming to conventional processes for manufacturing image sensors chips.

Regarding **claim 5**, Toma discloses the claimed invention except for the

photosensitive chip being a CMOS image sensor. It would have been an obvious matter of design choice to use either a conventional CMOS sensor or a conventional CCD sensor since the applicant has not disclosed that using a CMOS image sensor solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a CCD image sensor as disclosed by Toma.

### ***Response to Arguments***

Applicant's arguments filed on 10/16/07 have been fully considered but they are not persuasive.

Applicant asserts on page 7 that the reference to Parulski clearly suggests that the size of an image sensor of 512 x 768 pixels is the same as the size of a display screen of 512 x 768 pixels because the aspect ratio of a display of 240 lines x 312 pixels is different from the aspect ratio of an image sensor of 512 x 768 pixels. The examiner could not ascertain how the Applicant came to her conclusion based on the premises. On the other hand, an argument could be made that, if a sensor has the same number of pixels as an LCD, then they both are substantially the same size. However, such argument might be valid if the size of the sensor pixels is substantially the same as the size of the display pixels. As previously discussed in the rejection of claims 1 and 6, image sensor pixels are conventionally smaller than LCD pixels. Therefore, those ordinarily skilled artisans in the relevant art will recognize that the size of the image sensor will typically be smaller than the size of a display screen with the same number of pixels.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the display device taught by Ausems and the photosensor taught by Toma, i.e. minimizing the image processing required for image display by achieving a one-to-one mapping between the image sensor pixels and the display pixels, is found in the knowledge generally available to one of ordinary skilled in the art, as evidenced by Parulski in col. 8, lines 1-7.

Furthermore, nonobviousness cannot be shown by attacking references individually where the rejections are based on combinations of references, e.g. attacking the combination of Ausems and Toma excluding the well-known teachings of Parulski. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

For the foregoing reasons, the rejection is still deemed proper and has been maintained.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wanda M. Negrón whose telephone number is (571) 270-1129. The examiner can normally be reached on Mon-Fri 6:30 am - 4:00 pm alternate Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wanda M. Negrón/  
Examiner, Art Unit 2622  
December 18, 2007



DAVID OMETZ  
SUPERVISORY PATENT EXAMINER